



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
---------------	-------------	----------------------	---------------------

08/040,709 03/31/93 ARCOS

26M1/0222

PATENT COUNSEL  
TRW INC.  
SPACE AND DEFENSE SECTOR  
ONE SPACE PARK, E2/7073  
REDONDO BEACH, CA 90278

I 12-0592	
EXAMINER	
LE, H	
ART UNIT	PAPER NUMBER

2

2608  
DATE MAILED:

02/22/94

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

- ☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.                  |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____  |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-19 \_\_\_\_\_ are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-19 \_\_\_\_\_ are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Art Unit 2608

1. Claim 17 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, lines 2, 3, "the channels" lacks antecedent basis.

2. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1, 5, 5-9, 11-15, 18, 19 are rejected under 35 U.S.C. § 103 as being unpatentable over Williams, III et al.

Regarding claims 1, 5, 8, 9, 10, 13-15, 18, Williams, III et al. teach an apparatus and a method of amplifying an acoustical event comprising: a microphone (10), a variable gain amplifier (16, 36); a difference amplifier (50, 52, collectively); a long term energy (91); a short term energy (90); an automatic gain

Art Unit 2608

control circuit (See figure 3). Williams, III lacks the teaching of an earphone to receive an output signal from the variable gain amplifier. However, it is very well known in the art to connect the output of a circuit to a receiver such as an earphone for converting the output signal to the audible sound; also a hearing aid which is well-known in the art including a microphone, an amplifier and an earphone, therefore, it would have been obvious to one skilled in the art to connect the output of Williams bandpass filter to any receiver such as an earphone for converting the output signal to an audible sound, and it would have been obvious to apply the William circuit in the hearing aid for attenuating background noise.

Regarding claims 4, 11, 19, Williams, III et al. teach a long-term energy circuit having a power spectrum which does not change significantly over time (fast AGC 91) and short-term energy circuit having a power spectrum which significantly changes over time (slow AGC 90).

Regarding claims 6, 12, Williams III teaches a first weight amplifier being a negative weighted amplifier and a second weight amplifier being a positive weight amplifier. However, it would have been obvious to one skilled in the art to change the first weight amplifier (90) being a positive weighted amplifier and to change the second weight amplifier (91) being a negative weight amplifier and then to change the sign of the attenuator (36) in

Art Unit 2608

the Williams, III circuit for an alternative.

Regarding claim 7, Williams III shows the FET (36) which is inherently included the limitations as claimed in claim 7 because the FET has the sigmoidal transfer function (see page 222, figure 7.15B in the FET principles, experiments, and projects by Edward M. Noll).

4. Claims 2, 3, 16, 17 are rejected under 35 U.S.C. § 103 as being unpatentable over Williams, III et al. in view of Ishida et al.

Regarding claims 2, 3, 16, 17, Williams lacks the teaching of a plurality of amplification channels and a summing amplifier as claimed. Ishida et al. teaches several frequency bands applied to a summing amplifier (4, 10). Since breaking the audio signal to plural bands for controlling frequency and these frequency bands applied to a summary amplifier is well known, it would have been obvious to one skilled in the art to provide the plural bands applied to a summing amplifier, as taught by Ishida et al., in the Williams control circuit in order to break the audio signal to plural bands for controlling frequency.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dugan teaches a sound system to operate in the presence of ambient noise.

Killion et al. and Stearns et al. teach an electronical

Serial No. 08/040,709


-5-

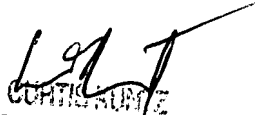
Art Unit 2608

circuit having an automatic gain control.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen Le whose telephone number is (703) 305-4844.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4750.

  
H.LE/TC  
February 8, 1994

  
CONFIDENTIAL  
SUPERVISORY PATENT DESIGNER  
GROUP 2000